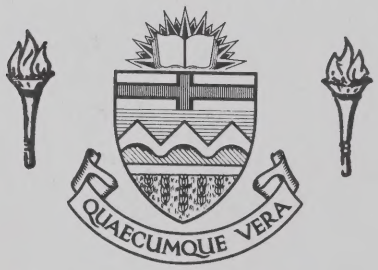

THE UNIVERSITY OF ALBERTA

SOLICITED ADVICE:
An Experimental Situational Approach

by

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A THESIS

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Abstract

The effects of predecisional information source and cost on information seeking and following behaviors were investigated in 2 experiments. Introductory psychology students served as Ss in a decision situation where money rewards were given for correct choices. In Experiment 1 three situational aspects were varied between Ss: a) Information was presented by a personal (advice) or impersonal (computer) source. b) Ss had to solicit information or received it without soliciting in yoked comparison groups. c) Solicited information cost money or was free. Experiment 2 was a substantive replication of Experiment 1. In Experiment 2 information source was a within S variable and there were no unsolicited information groups. Analyses of variance, t tests and correlations were used to assess the statistical significance of relationships. Information was sought less frequently from the personal (E) source than from the impersonal (computer) source in Experiment 1. Costly information was sought less frequently than free information in both experiments. Information seeking data supported the theoretical proposition that the covert and monetary costs of information combine to decrease the frequency of information seeking. However, the information following data didn't support the hypothesis that more costly recommendations would be followed more frequently than free recommendations.

Dedication

This thesis is dedicated to Karl and Edna Nutter. They epitomize in their way what I would like to in my way.

Acknowledgements

In some sense, this project started in a one room school house in the Sweetgrass Hills of Montana. Between those picturesque beginnings and this culmination of my formal education have been many intervening stages. I have had the priviledge of meeting and interacting with many important people, important to me. Phil Gray, Bill Miller, and Duane Rubadeau, were the psychologists with whom I interacted at Montana State. Duane Hill, a political scientist, taught me what it was to be a professional. Hugh Via reinforced my perceptions of dignity in manual endeavors. The folks at Queen's showed me what it felt like to be not very important, not very bright, and not very well socialized. John Caylor and Bob Grabowski provided both light within and light at the end of the tunnel I entered upon receiving greetings from the President. John and Bob helped me translate and integrate that which I valued most in my early beginnings in the Hills into a life style facilitating a personally meaningful survival in an urbanized setting. Teddy Weckowicz looked beyond my formal qualifications and treated me as a colleague. Mike Burke has tolerated my "black box" approach to instrumentation and provided rewarding guidance.

Nine years ago I met Carolyn. She has consistently provided me with emotional support, companionship, and intellectual stimulation. For good measure she has also thrown in humour, sex, four children, and a bit of hysteria. We have discussed analyses and writing and she has helped with the typing of many drafts. What more could anyone ask?

Another woman has been immensely important in my life for the past seven years. Brendan Rule has been my professor, supervisor, occasional

confessor, supporter, and friend. She has been tolerant, stimulating, flexible, and demanding. She suggested that advice might be a behavior worth investigating about four years ago. From then to now she has supported me through each successive phase of my thinking and development of the topic. Brendan has provided detailed constructive criticism (the art of evaluating or analyzing with knowledge and propriety), money (National Research Council Grant ATA96), and laboratory space.

Thus, my graduate career has, in some real sense, been a tale of two women. Their involvement has permeated this project. Thank you.

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Introduction

When one person asks another person what to do he is soliciting advice. A solicited advice situation minimally consists of an advisee who has a problem and an adviser who may have a solution. Understanding the situational determinants of advice seeking and following has broad implications for more traditional areas of social psychology. Surprisingly, these situational determinants have not previously been contemporaneously analyzed. Investigators of topics such as information seeking and decision making (Slovic & Lichtenstein, 1971) and selective exposure (Freedman & Sears, 1965) have studied phenomena which may be closely related to advice seeking. However, the previous work most relevant to advice following is found under the rubrics of attitude change (McGuire, 1969) and group problem solving (Kelley & Thibaut, 1969). The purpose of this thesis is to elucidate some of the situational determinants of both advice seeking and following behaviors. To do this, disparate empirical work and theory were selectively integrated within the framework of attribution theory.

Attribution theorists (Bem, 1965; Kelley, 1967; Kelley & Thibaut, 1969) have contended that individuals know and explain their own behaviors in much the same way they do the behaviors of others. According to attribution theory, individuals strive to attain and maintain consistency. In a decision situation where the decision-maker is uncertain about alternatives or outcomes, there is a lack of consistency.[1] That is, unless a decision-

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1 Kelley (1967) and Kelley & Thibaut (1969) tend to equate "stability" and "consistency" of attributions. In this thesis, uncertainty and lack of consistency are assumed to be the opposites of stability, certainty, and consistency. In the most general sense, individuals are expected to initiate change to move from a state of uncertainty or lack of consistency to a state of stability, certainty, or consistency. When enjoying a state of consistency, an individual is expected to react to maintain it.

maker has sufficient knowledge of alternatives and outcomes he cannot know what actions will lead to a state of affairs consistent with his aspirations or expectations. Thus, Kelley and Thibaut (1969) have argued that striving for consistency leads individuals to pursue new knowledge. Findings from work on selective exposure (Freedman & Sears, 1965; Mills, 1968; Sears, 1968; Katz, 1968) have supported this notion. Information is sought because "people want to be certain when they take action that it is better than the alternative (Mills, 1968, p. 766)."

There is evidence, however, that predecisional information seeking does not proceed unrestrained. It has been found that the frequency with which predecisional information is sought decreases as the monetary cost of information increases (Hershman & Levine, 1970; Irwin & Smith, 1957; Lanzetta & Kanareff, 1962; Nutter, 1972). On the other hand, Wendt (1969) demonstrated that the amount Ss are willing to pay for information increases as the diagnosticity of information increases. Similarly, Irwin and Smith (1957), Lanzetta and Kanareff (1962), and Nutter (1972) obtained results indicating that subjects are willing to pay more for predecisional information as the importance of outcomes increases. Apparently Ss adjust the amount they are willing to spend for predecisional information depending upon how much benefit they attribute to its receipt. These findings have indicated that an assumed striving for consistency through uncertainty reduction does not constitute a sufficient explanation for many predecisional information seeking phenomena. Decision-makers' predecisional information seeking behavior seems to be determined by an attributional cost-benefit analysis of which uncertainty reduction is only one, although an important, component.

In other words, previous findings have indicated that the monetary cost and the attributed usefulness of information from available sources are important determinants of predecisional information seeking behavior. As cost increases less information is sought. However, increases in attributed usefulness increase information seeking. Because attributed usefulness is the reason Ss seek information, it must not be so great as to preclude the operation of other variables. Thus, although the usefulness of information was not systematically manipulated in this thesis, it was assumed to be a primary determinant of predecisional information seeking. Decision makers are assumed to attribute usefulness to information which increases the probability of attainment of a large rather than a small payoff.

Attribution theory formulations have indicated that situational attributes other than monetary cost have cost-like effects on the frequency with which information is sought from a particular source (Kelley & Thibaut, 1969). The cost-like situational attributes of interest in this thesis may be conceptualized as covert expenditures required to obtain information from a source. These covert expenditures may account for evidence like that presented by Lanzetta and Kanareff (1962) which indicated that Ss do not seek as much information before making decisions as they should even when that information is free. However, not all investigators have found that Ss always seek too little information. Slovic and Lichtenstein (1971) and Wendt (1969) concluded that Ss spend too much for predecisional information in some conditions. One explanation for Ss paying too much for information in some situations has been offered by Ullrich (1969). From his data Ullrich has concluded that Ss place some value on being correct. Thus, they may overspend for information in order

to make correct decisions. Unfortunately, the situational determinants of this type of behaviour are not well defined.

Covert costs of solicited advice may be particularly important. For example, Ss may be less likely to solicit advice directly from another individual than to seek equivalent information from some impersonal source. The basis of this prediction is the implied negative comparison that soliciting advice entails. That is, to ask another person for the solution to a problem is an admission that that other person, the adviser, is more capable. What is more, the admission is public, at least to the adviser. Thus, advice may generally be perceived as more costly than equivalent information from impersonal sources.

The covert costs of advice presumably combine with monetary cost in determining attributed cost. Thus, even though an individual's covert expenditures cannot be quantified as directly as monetary cost, covert costs may be inferred from cost-like effects. Just as increasing monetary cost decreases information seeking, increasing covert costs should also decrease information seeking. Increases in this combination of costs (attributed cost), may be directly reflected by less information seeking. Similarly, the costs attributed to information from available sources should be inversely reflected in the relative information seeking from those sources.

Recommendation following may be influenced by a dynamic similar to that proposed to account for information seeking. In his interpersonal replication of the Festinger and Carlsmith (1959) findings, Bem (1965) explained his Ss' responses as attributionally consistent. That is, Ss paid $20 to say a dull task was interesting did not have to be convinced

that the task was interesting. The $20 was reason enough for the statement. However, Ss paid only 50¢ had to perceive the task as more interesting. Fifty cents was not sufficient justification for lying in public. The same logic may be applied to the following of recommendations. Once an individual has spent money to obtain predecisional information, it should be difficult for him to disregard the recommendations contained in that information and still maintain attributional consistency. Paradoxically, although attributed cost may decrease the likelihood that information will be sought from a source, costly information might be more impactful than free information.

Aronson and Mills (1959) have provided some support for this hypothesized effect of cost on the subsequently attributed worth of information. They found that female college students undergoing a severe initiation in order to listen to a dull discussion evaluated that discussion more positively than Ss in a mild initiation condition.

Thus, attributed cost may determine information utilization as well as information seeking. The costs, monetary and covert, incurred in obtaining information may influence the subsequent use of that information. It would not be consistent with most decision maker's expectations to disregard information they had obtained at some cost. Thus, although attributions other than cost (e.g. low usefulness) might decrease information seeking, only attributions of cost would be expected to both decrease information seeking and increase following.

The act of seeking information may involve covert costs. A decision maker would be expected to seek recommendations which might enable him to make money. If the recommendations were free, he might be expected

to seek them before each decision. However, if a decision maker sought few of the free recommendations, it might be inferred that seeking them involved some covert cost. When equivalent recommendations were received without seeking (unsolicited information), no cost should be attributed. However, if attributed cost were the reason few recommendations were solicited, solicited recommendations should be followed more than unsolicited recommendations. Similarly, recommendations which cost money should be sought less frequently, but followed more frequently, than free recommendations.

The covert costs of seeking information may be related to the information source. Soliciting advice is expected to be more costly than seeking equivalent information from an impersonal source. Therefore, solicited advice should be sought less, but followed more, than equivalent recommendations from an impersonal source.

The differences between the frequency of seeking and the relative frequency of following advice versus impersonal information should decrease as the monetary cost of both increases. This prediction is based upon findings which indicate that individuals' responses are associated with relative changes in stimulus magnitudes (Edwards, et al. 1965; Stevens, 1951). For example, Ss perceive the difference between one and five as greater than the difference between five and nine (Rule, 1972). Thus, if free solicited advice is attributed more cost and subsequently more worth than equivalent predecisional information from an impersonal source, charging the same amount of money for each should increase the attributed cost and subsequently attributed worth of advice less. This interaction would not be expected if covert and monetary costs did not combine monotonically to determine the attributed cost and subsequent worth of predecisional information.

Predecisional information seeking and following might involve the following sequence of attribution theory processes. First, a decision maker perceives himself as confronted with a choice among alternative actions, the consequences of which are uncertain. If the decision is sufficiently important, the decision maker will seek predecisional information. The amount of predecisional information he acquires will depend upon the usefulness and cost he attributes to information available to him. The received information will then be compared with previous knowledge. If it is not so inconsistent with previous knowledge that he labels it useless, worth is attributed to the information according to the decision maker's expenditure to obtain that information. The higher the worth attributed to the information, the more inconsistency would be involved in disregarding the information. Therefore, the greater the decision maker's expenditure on predecisional information, the more likely he is to follow recommendations contained therein. In other words, expenditures engaged to obtain predecisional information are hypothesized to subsequently constrain the behavior of the decision maker. The amount of expenditure and degree of constraint are expected to covary.

These propositions were assessed using a decision making situation where objectively equivalent advice and impersonal predecisional information were available. The advice, personal source information, was coded recommendations from the E. The impersonal source information was coded recommendations from a computer. The following specific hypotheses were tested:

1) The greater the monetary cost of predecisional information the less frequently it is sought.

2) The greater the covert cost of free predecisional information the less frequently it is sought. Soliciting advice is expected to involve greater covert costs than soliciting impersonal information.

3) Monetary cost decreases the frequency of information seeking less when covert costs are high than when they are low. Operationally, decreases in information seeking are expected to be related to proportional increases in attributed cost.

In a situation where these hypotheses are supported and where free predecisional information is sought less frequently than justified by the decision payoffs and objective diagnosticity of that information the following hypotheses should also be supported.

4) The impactfulness of recommendations increases as the attributed cost of those recommendations increases from unsolicited through free solicited and costly solicited conditions, respectively.

5) A greater proportion of high covert cost (solicited advice) recommendations are followed than recommendations sought from a low covert cost (impersonal) source.

6) Monetary cost increases the proportion of recommendations followed less when covert costs are low than when they are high. Soliciting advice is expected to involve greater covert costs than soliciting impersonal information.

Method

Two experiments were conducted simultaneously. In Experiment 1 a between Ss methodology was used. That is, different samples of Ss were run in each of six different experimental conditions. Data pertinent to each of the six hypotheses were collected in Experiment 1. In Experiment 2 a within Ss methodology was used to compare information sources. Parts of all six hypotheses were tested but there was no unsolicited information condition in Experiment 2.

Both between and within Ss methods of assessing these hypotheses were used because: 1) These two methodologies served as substantive replications of one another. 2) The between Ss methodology of Experiment 1 was regarded as less susceptible to experimenter demands in relation to which type of information was sought. 3) The within Ss methodology of Experiment 2 was expected to more sensitively reflect differences in covert costs which would enhance following advice (E's recommendations) versus impersonal (computer) recommendations.

The decision situation involved repeated choices. Ss selected one of ten alternatives on each trial. Ss received a monetary reward for each correct choice. In order to maximize their earnings, Ss in each experimental condition should have sought and/or followed available predecisional information as frequently as possible.

Conceptually, the two independent variables were the attributed cost and the source of pre-decisional information. The cost of predecisional information was manipulated in both Experiments 1 and 2. In costly solicited conditions, Ss were charged for information they requested. In free solicited conditions Ss were not charged for information they requested.

Experiment 1 also included unsolicited conditions, conditions in which Ss received information without having sought it. Thus, attributed costs were conceived as ranging from zero or minimal in the unsolicited conditions to relatively high in the costly solicited conditions.

Two sources of information were compared. Ss in advice (personal source) conditions in Experiment 1 received coded recommendations from the E via handwritten notes. Ss in computer (impersonal source) information conditions in Experiment 1 received diagnostically equivalent coded recommendations from a computer via a "computer display screen." In Experiment 2, Ss sought information from the E or from the computer and received information from both each time they sought either.

The predecisional information seeking behavior of Ss in the free and costly solicited conditions was analyzed to determine if the first three hypotheses were supported in this situation. The information seeking frequencies of Ss in the free solicited conditions were assessed to determine if predecisional information was sought less frequently than it should have been to maximize payoffs. These analyses of advice and computer information seeking were used to infer the attributed costs.

The recommendation following behaviors of Ss in all six groups of Experiment 1 were then analyzed. If these analyses supported hypotheses 4, 5, and 6, they would also have supported the underlying proposition that covert and monetary expenditures combine monotonically to determine the attributed cost and subsequently attributed worth of predecisional information.

All Ss in both Experiments 1 and 2 completed post-experimental questionnaires. The questionnaire data provided an independent assessment

of the efficacy of the manipulations. The questionnaire data also provided an assessment of the degree to which the boundary conditions of the theoretical bases of the specific hypotheseswere met.

Experiment 1

Subjects

Seventy-two introductory psychology students who signed for individual appointments served as Ss. They received course credit and money in return for their experimental participation. The sign-up booklet gave Ss no indication of the nature of the study except that it would take about 45 min. and requested punctuality. The data of 12 Ss were excluded from the analyses. The reasons for excluding Ss are reported in the results section. In most cases the decision to exclude an S was made immediately after his debriefing and he was replaced by the next S participating. Five females and five males provided complete experimental data in each of six experimental conditions.

Design

The six experimental conditions were unsolicited advice, free solicited advice, costly solicited advice, unsolicited computer information, free solicited computer information, and costly solicited computer information. Ss in the free solicited advice condition received a coded recommendation from the E (personal source) each time they sought information. Ss in the free solicited computer information condition received a coded recommendation from the computer (impersonal source) each time they sought information. Each S in the unsolicited advice condition was yoked to one S in the free solicited advice condition so that they received the same coded recommendations on the same trials. Each S in the unsolicited computer information condition was yoked to one S in the free solicited computer information condition so that both Ss received the same coded

recommendations on the same trials. Ss in the costly solicited advice and costly solicited computer information conditions were charged money for the coded recommendations they sought and received. Ss were assigned to experimental conditions so that one replication of this experiment was completed before the next replication was begun. Each S in either free solicited conditions participated before his yoked comparison S in the appropriate unsolicited condition.

Data pertinent to information seeking behavior were collected in the free solicited advice, costly solicited advice, free solicited computer information, and costly solicited computer information conditions. These four groups were conceptualized as a 2 x 2 analysis of variance design where source of information and monetary cost of information were the two independent variables. The frequency with which each S sought information during a 40 decision trial session was the dependent measure of information seeking.

Information utilization data were gathered in each of the six experimental conditions. These conditions were conceptualized as forming a 2 x 3 analysis of variance design. The independent variables were source of information and psychological cost of information. Recommendations received in the unsolicited conditions were conceived as having the lowest psychological cost. Recommendations received in the costly solicited conditions were conceived as having the highest psychological cost with recommendations in the free solicited conditions intermediate in psychological cost. The dependent measures of information utilization were the frequency with which Ss followed recommendations and the proportion of received recommendations followed by each S during the 40 trial session.

Apparatus

Ten double pole double throw toggle switches mounted on individually numbered and coloured squares on a board placed on a table in front of the seated S were the decision choice manipulanda. Also on the 30 x 42 inch table, a fifteen inch high blue plywood screen of three joined segments separated the S from the E. Mounted in the screen segments from the S's right to left were a 4 x 5 inch display module above a "computer information" button, a "ready" pilot light and a slot labelled "experimenter's information," and a 4 x 3 inch display module mounted above an "answer" button. A nickel dispenser with a visible column of nickels and a tray to receive nickels earned by the S were to the left of the "answer" display module and button. Eye contact could be maintained between the E and the S. However, the E's activities recording data, writing advice messages, and working the apparatus were shielded from the S's view. A Computer Mechanisms Corporation Model 18 Paper Tape Reader (PTR) was used to read eight level paper tape punched with two "1"s compliment BCD characters. The PTR output was decoded using Motorola Model MC7442P ICs to drive Raytheon "M" Series Logic Modules, Hunter 100C Timers, Industrial Electronics Engineers display modules, and a modified Lehigh Valley Electronics coin dispenser. One PTR character determined the correct decision (number on the "answer" display module) on each trial. The other PTR character determined the "computer information" display. The PTR was incremented by the E every trial. The decoded PTR characters were appropriately gated with the rest of the apparatus so that nickels were dispensed automatically when the S responded.

The "answer" number series was one set of ten and two sets of twenty numbers selected from a table of random numbers (Edwards, 1968) with the restriction that each digit, zero through nine, appear equally often in each series. The experimental sessions were conducted in a small, 7 x 9 feet, room moderately illuminated by fluorescent lighting. The E always wore a clean white lab coat over a shirt, tie, and clean jeans.

Advice and Computer Information

Each of the ten switches on the choice board was mounted on a numbered square. These squares were painted one of five colours, gray, red, green, black, or white. Each advice and computer information message made a specific choice recommendation. These coded recommendations were two word messages: "high" or "low" and a colour name, e.g., "high red," "low black," etc. Advice and computer recommendations were correct on thirty of the forty decision trials of the main session. The correct colour was always given. On five of the first twenty and five of the second twenty trials, computer information recommended "high" when the correct number was "low" or vice versa. The order of wrong recommendations was randomly determined and the same for every S. The ten incorrect advice messages were given on different trials from the incorrect computer information messages, five in the first and five in the second twenty trials. Thus, advice and computer information were equal in objective diagnosticity, 75%.

The expected value of guessing numbers without information was 1¢ per trial. If information was sought and followed on each trial the expected values were 7.5¢ and 2.5¢ per trial in the free solicited and costly solicited conditions, respectively. Thus, S's should have sought and followed information each trial in order to maximize their earning.

Experimental Task and Procedure

Ss were instructed to participate in a decision making task which the E and one of his colleagues had designed. The S was instructed "to help me gather data on how people utilize different kinds of information in making decisions. ...A colleague and I have chosen a number series task which is relatively difficult. Your job is to predict which number from 0 to 9 will appear on this screen (E points) each time you press the ANSWER button below the screen (E points). You will make these predictions by pushing ON a numbered switch on the board in front of you (E points). My colleague, Paul, and I have decided to pay you ten cents, two nickels, each time you choose the correct number... If the number you choose appears, two nickels will be dispensed from the coin dispenser into this tray for you (E points). If some other number appears, two nickels will be ejected behind the screen. The numbers will appear in a pre-arranged series. Your task is to earn as many nickels as you can by correctly predicting which number will appear. Push ON the switch of the number you choose. Then press the ANSWER button to find out if you were correct or which number it was if you were wrong. This READY light (E points) will light at the beginning of each decision trial... After the READY light comes on, make sure that all of the switches are OFF (E points to choice board). Then push ON the switch of the number you choose for that trial...." (Appendix A.)

Following ten decision trials the E interrupted the procedure. "Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset." The E continued reading instructions appropriate to the experimental condition to which the S had been assigned:

Free solicited advice condition. "Everybody seems to approach deciding which number to select a bit differently. Since the important thing here is that you have a fair degree of success, I will be glad to give you information which you may use in making your selection. The information which I give you will be that which I think will help you most in trying to get this number series problem. Of course, I can't guarantee that my information will always lead you to make the correct choice but I think it will be the best for you in terms of making predictions. I am interested in how you use the information I give you. If you want information on any trial, just ask me. I'll be glad to write down and give you what I think will be the information most useful to you. Any questions? Okay, let's begin." The E wrote the appropriate coded recommendation on a slip of paper and passed it through the "experimenter's information" slot to the S on each trial the S asked for information.

Unsolicited advice condition. Instructions were the same as those read to Ss in the free solicited advice condition through the sentence, "I am interested in how you use the information I give you." The E then continued, "I will write down and give you information when I think it will be most useful to you. Before you make your prediction on a trial, you should wait and see if I am going to give you information on that trial. Any questions? Okay, let's begin."

Costly solicited advice condition. Instructions were the same as those read to Ss in the solicited advice condition through the sentence "I'll be glad to write down and give you what I think will be the information most useful to you." The E then continued, "However, in order to be fair to everybody who participates in this task, you will have to pay

for the help you receive. That is, it would be unfair if you got information on a large number of trials and earned more money than someone else who made good choices without so much help. As I said before, you can keep all the nickels you earn from this column by making correct choices. Because I think the information I give you will help you make more money, each piece of information you get will cost you a nickel. That is, each time you ask me for help, a nickel will be ejected from the column. If you then make the correct choice, you will receive only one instead of two nickels. If you still make the wrong choice after getting the information, the nickel you would have won on that trial will be lost as well. Any questions? Okay, let's begin." The E toggled a switch which caused one nickel to be ejected behind the screen as he handed the advice to the S through the "experimenter's information" slot.

Free solicited computer information condition. "Even though each person seems to have different hang-ups in solving this task, the student who I am working with on this project believes that there should be one best set of information which will be most useful to everyone trying to get this number series problem. Paul also has a great deal of faith in computers. The two of us got together and wrote a computer program which put out some information which Paul feels will be useful to anyone in this task. Since the important thing here is that you have a fair degree of success, you can get the computer information outputs. Of course, I can't guarantee that this information will always lead you to make the correct choice but according to the computer this information is the best in terms of anyone's making predictions. I am interested in how you use this information. If you want one of the computer's outputs on any trial, just hold this COMPUTER INFORMATION button down and watch the screen above

it (E points). The information on the screen will be the computer programmed information. Any questions? Okay, let's begin."

Unsolicited computer information condition. Instructions were the same as those read to Ss in the solicited computer information condition through the sentence, "I am interested in how you use this information." The E then continued, "You will get the computer information outputs when, according to the program, it should be generally most useful to you. Before you make your prediction on a trial, look at the COMPUTER INFORMATION screen (E points). Any questions? Okay, let's begin." The E toggled a switch which caused the computer information display screen to light on appropriate trials.

Costly solicited computer information condition. Instructions were the same as those read to Ss in the free solicited computer information condition through the sentence "The information on the screen will be the computer programmed information." The E then continued with the same justification for charging for information and instructions as those used in the costly solicited advice condition except, "Because Paul thinks that the computer's information will help you make more money, output will cost you a nickel. That is, each time you press the COMPUTER INFORMATION button, a nickel will be ejected from the column.." Each time the S pressed the "computer information" button a nickel was ejected behind the screen from the coin dispenser. In the costly conditions, ejecting the nickel charged for information set a flip flop in the control logic so that only one nickel was ejected when the S pressed the "answer" button.

Upon completion of the forty decision trials of the main experimental session the E escorted the S into another small room. The E left the S there to complete the appropriate form of the post-experimental questionnaire (Appendix B). Before the S had finished the questionnaire the E

re-entered the room with the S's earnings and experimental credit card. The S then signed a receipt for the cash and was left to complete the questionnaire. After the S had completed the questionnaire he read an explanation of the experiment (Appendix C) while the E was present. The E then solicited and answered questions from the S. The S was then thanked for his cooperation and asked not to discuss the experiment with anyone.

The quantitative portion of the post-experimental questionnaire was a series of questions each followed by a 120 mm. line divided into six equal 20 mm. intervals. Appropriate adjectival labels were under each end and the mid-point of each of these scales. The raw score of each S on each scale was the distance of his mark in millimeters from the left hand end of the scale.

The first page of the post-experimental questionnaire was the same for every S. The second page contained only those items pertinent to the experimental condition in which the S had participated.

Results of Experiment 1

Information seeking. The frequency with which Ss sought predecisional information in the four solicited conditions of this experiment are summarized in Table 1. These information seeking data were hypothesized to reflect the psychological cost of information in these conditions. In this context, it was assumed that information which could be obtained at no psychological cost and which had some diagnosticity should be sought 100% of the time. Thus, the first concern was that the mean information seeking frequencies in these four conditions were less than 40. Confidence intervals about the mean information seeking frequency for each of the four solicited groups were computed. Only the upper side of the confidence intervals were of interest in determining whether information was obtained in these four solicited conditions at some psychological cost. Using the appropriate confidence intervals, it may be concluded that these data provide statistically significant evidence that information was solicited less than 100% of the time in each of these four solicited conditions.

A 2 x 2 analysis of variance computed on the information seeking frequency of the four solicited groups is summarized in Table 2. This analysis indicated that advice was sought less frequently than computer information and that the costly information was sought less frequently than the free information. This analysis of variance did not indicate a significant interaction involving information source and monetary cost of information. The differences between the means of the costly versus free advice and computer information conditions are in the predicted direction (Table 1). That is, monetary cost decreased the mean frequency with which computer information was sought insignificantly more than it decreased the mean frequency with which advice was sought.

Table 1

Means and Confidence Intervals of Information Seeking Frequency in Experiment 1

Information Source	Monetary Cost	
	Free	Costly
Experimenter	25.8 ± 9.818**	13.8 ± 4.099**
Computer	34.0 ± 5.886*	19.9 ± 8.110**

*p = .05 one-sided

**p = .025 one-sided

Table 2

Summary of 2 X 2 Analysis of Variance of Information Seeking Frequency of Experiment 1

Source	df	SS	MS	F
Information Source	1	511.225	511.225	4.515*
Information Cost	1	1703.025	1703.025	15.041**
Source X Cost	1	11.025	11.025	0.097
Error	36	4076.1	113.225	
Total	39	6301.375		

Note. - A 2 X 2 X 2 X 2 analysis of variance was computed on these data. The factors were sex, cost, source, and trial block. Trial block, the first 20 versus the second 20 trials, was treated as a repeated measure. Neither sex nor trial block yielded significant main effects or entered into any significant interactions.

*p < .05

**p < .01

Recommendation following. A 2 x 3 analysis of variance computed on the proportion of recommendations followed by Ss in this experiment is summarized in Table 3. This analysis of variance provided no statistically significant support for the proposition that recommendations are followed a greater proportion of the time in costly than in less costly conditions. There was a slight, but not statistically significant, trend for advice to be followed a greater proportion of the times it is received than computer information (Table 4). No evidence in these proportion of recommendations followed data supported the predicted interaction between source and cost of information.

In this study the psychological cost of information was inferred from the frequency with which information was sought. Pearson product-moment correlation coefficients were computed in order to further examine the possible relationship between the psychological cost of information (seeking frequencies) and the proportion of recommendations followed (Table 4). The correlation between information seeking and proportion of recommendations followed in the costly solicited advice and solicited computer information conditions were significantly different from zero. A correlation of -0.33 between the frequency of recommendation seeking and proportion of recommendation following was found when the data from the free solicited advice, costly solicited advice, free solicited computer information, and costly solicited computer information conditions were pooled ($p < .025$, $df = 38$, one-sided).

A 2 X 3 analysis of variance on the frequency with which recommendations were followed in this experiment is summarized in Table 5. There was a slight but not significant trend for recommendations to be followed more frequently in the computer information than in the advice

Table 3

Summary of 2 X 3 Analysis of Variance of the Proportion of Received Recommendations Followed

Source	df	SS	MS	F
Information Source	1	0.092723	0.092723	2.5675
Information Cost	2	0.020650	0.010325	0.2859
Source X Cost	2	0.004573	0.002287	0.0633
Error	54	1.950483	0.036614	
Total	59	2.068095		

Note. - A 2 X 3 X 2 X 2 analysis of variance was computed on the proportion of recommendations followed data. The factors were sex, psychological cost, source, and trial block. Trial block, the first 20 versus the second 20 trials, was treated as a repeated measure. No F ratio in the analysis of these data was significant.

Table 4

Recommendation Following Behavior

Information Source	Psychological Cost Conditions		
	Unsolicited	Free Solicited	Costly Solicited
Mean proportion of recommendations followed			
Experimenter	.79	.83	.80
Computer	.73	.76	.69
Correlations between seeking frequency and following proportions			
Experimenter	-.34	-.21	-.59*
Computer	-.48	-.67**	-.41
Mean recommendation following frequencies			
Experimenter	19.9	21.0	10.5
Computer	23.8	24.7	12.9
Correlations between frequency of seeking and following			
Experimenter	.95**	.92**	.82**
Computer	.56*	.68**	.81**

*$p < .05$, 8df, one-sided

**$p < .025$, 8df, one-sided

Table 5

Summary of 2 X 3 Analysis of Variance of Frequency of Recommendation Following

Source	df	SS	MS	F
Information Source	1	166.66	166.66	2.1645
Information Cost	2	1522.3	761.15	9.8851*
Source X Cost	2	6.63	3.32	0.0431
Error	54	4158.0	77.0	
Total	59	5853.59		

Note. - A 2 X 3 X 2 X 2 analysis of variance was computed on the frequency of recommendation following data. The factors were sex, psychological cost, source, and trial block. Trial block, the first 20 versus the second 20 trials, was treated as a repeated measure. No F ratio involving sex or trial block was significant.

*$p < .01$

conditions (Table 4). Recommendations were followed significantly less frequently in the costly conditions than in other conditions. Correlations between number of recommendations received and number followed were significant in all six experimental conditions (Table 4).

Post-experimental questionnaire. The post-experimental questionnaire scales data were analyzed using 2 X 3 analyses of variance except as noted in Table 6. The two factors of these analyses were source of information and cost manipulation. The scales on which analyses yielded no significant differences were: "How well do you think you would do if you repeated this experiment?"; "How good was the experimenter's information?"; and "How good was the computer's information?" Means of scales, the analysis of which yielded significant F ratios, are presented in Table 6.

Time. Ss participated in the decision task at their own speed. Thus, the duration of the 40 trial decision session was free to vary according to the rate at which Ss sought information and/or made their decisions. The time from the beginning to end of each S's 40 trial decision session was recorded by the E using a stopwatch referent. A summary of these time data is presented in Table 7. Ss in the advice conditions spent more time completing the 40 decision trials than Ss in the computer information conditions. The probable reason for the large difference in time between the advice and computer information conditions is the amount of time taken by the E to write the recommendation each time and pass it to the S. In the computer information conditions the recommendation appeared on the screen immediately when the S pressed the button.

Ss in the free solicited conditions took longer than Ss in unsolicited or costly solicited conditions. Task time was highly correlated

Table 6

Post-experimental Questionnaire

Scale Response Means

Information Source Conditions	Psychological Cost Conditions			Information Source Means
	Un-solicited	Free Solicited	Costly Solicited	
"Did you find solving the problem difficult?"				
Advice	68.4	97.7	97.1	87.73[g]
Computer	67.2	66.6	85.3	73.03[g]
Cost cond. means	67.8[a]	82.15[a]	91.2[a]	
"In comparison to other participants, how well did you do on this task?"				
Advice	63.0	56.8	45.4	55.067
Computer	50.4	64.1	51.1[e]	55.2
Cost cond. means	56.7[a]	60.45[a]	48.25[a]	
"Was this task one of chance or one of skill?"				
Advice	76.3	79.0	54.9	70.07
Computer	58.0	77.3	36.6	57.3
Cost cond. means	67.15[c]	78.15[c]	45.75[c]	

(continued next page)

Table 6 (continued)

Post-experimental Questionnaire

Scale Response Means

Information Source Conditions	Psychological Cost Conditions			Information Source Means
	Un-solicited	Free Solicited	Costly Solicited	
"How competent is the experimenter?"				
Advice	99.5	105.6	99.9	101.67[b]
Computer	88.9	96.9	86.2[f]	90.67[b]
Cost cond. means	94.2	101.25	93.05	
"How competent is the experimenter (Paul)?"[d]				
Computer (E)	88.9	96.9	86.2[f]	90.67[b]
Computer (Paul)	82.8	84.7	80.0[f]	82.5[b]
Cost cond. means	85.85	90.8	83.1	

Note - Missing observations were treated as described by Winer (1962, p. 222-224) in his unweighted means solution.

[a] Comparison was significant in 2x3 analysis of variance ($p < .05$)

[b] Comparison was significant in 2x3 analysis of variance ($p < .025$)

[c] Comparison was significant in 2x3 analysis of variance ($p < .01$)

[d] These data from computer information conditions were analyzed using 3x2 repeated measures design in which competence ratings of E and Paul were nested within Ss.

[e] Two Ss in this group failed to respond to this item.

[f] One S in this group failed to respond to these items.

[g] 2x3x2 (Source x Cost x Sex) analysis indicated this comparison significant ($F = 4.347$, $df = 1/48$, $p < .05$) when variation attributable to sex was taken from error term although the sex variable entered into no significant F ratios.

Table 7

Time to Complete 40 Trial Decision Task

Information Source Conditions	Mean Time in Minutes: Psychological Cost Conditions			Information Source Condition Mean
	Un-solicited	Free Solicited	Costly Solicited	
Advice	12.922	19.745	12.741	15.136
Computer	9.149	10.383	9.971	9.834
Cost Cond. Mean	11.0355	15.064	11.356	12.485

2x3 Analysis of Variance of Task Time

Source	df	SS	MS	F
Information Source	1	421.615	421.615	18.5148**
Information Cost	2	200.539	100.269	4.4032*
Source x Cost	2	126.162	63.081	2.7701
Error	54	1229.634	22.771	
Total	59	1977.950		

* $p < .05$

** $p < .005$

with the number of times advice was received in the unsolicited and costly solicited advice conditions, $r = .86$ and $r = .82$, respectively ($p < .01$, $df = 8$, two-sided). Task time was negatively correlated with information receipts in the unsolicited computer information condition, $r = -.79$ ($p < .01$, $df = 8$, two-sided). Task time did not correlate significantly with the proportion of recommendations followed in any of these groups.

Discarded subjects. Six Ss, three in the free solicited advice and one in each of the other three solicited conditions, never requested predecisional information. They were excluded from the foregoing analyses because they provided no data suitable for matching in unsolicited conditions or data pertinent to recommendation following.

Six Ss were excluded from the foregoing analyses on the bases of their responses to the post-experimental questionnaire or information they volunteered during debriefing. Four of these Ss, two in the costly solicited computer information and one each in the free solicited and costly solicited advice conditions indicated verbally that they felt the information they received was not helpful. These Ss also marked the questionnaire scale item asking, "How good was the experimenter's (computer's) information on the "poor" side of the scale's midpoint, "fair". The other two excluded Ss in the solicited computer information condition indicated that they did not believe the manipulations. One volunteered that the instructions were "B.S." and wrote on the questionnaire that she hated computers. The other said he thought the computer information was really coming from the E and was disguised to confuse him.

The decision task data of the discarded Ss was checked against the data of Ss in the appropriate conditions who were not discarded. With the exceptions noted above, the data from excluded Ss fell within the ranges of data from Ss not discarded.

Experiment 2

Subjects

Thirty-three introductory psychology students participated in this experiment on the same bases as Ss participated in Experiment 1. Data from five females and five males were used in each of two experimental conditions of this experiment. The 13 Ss whose data were discarded were immediately replaced so that one replication was completed before another was begun. Pertinent information about the discarded Ss is presented in the results section.

Design

Ten Ss provided data in each of two experimental conditions in this experiment. All Ss in this experiment could seek either advice or computer information prior to choosing one of 10 alternatives on each of 40 decision trials. Ss could earn two nickels for each correct choice. In the free condition Ss received both advice and computer information free each time they sought either. The costly condition was the same except that Ss were charged one nickel each time that they requested either advice or computer information. Thus, Experiment 2 was a within S design since each S could express a preference for either the E (advice) or the computer as an information source on each of 40 trials. Likewise, each S could choose to follow either advice or the computer information on 50% of the trials on which they disagreed. Planned comparisons were: 1) frequency of seeking advice in the free versus costly conditions, 2) frequency of seeking computer information in the free versus costly conditions, 3) the proportion of times advice was followed in the free versus costly conditions

on those 50% of trials where advice and computer information were expected to disagree, 4) the number of times the advice rather than the computer recommendation was followed by S in each condition on the first trial the two disagreed, and 5) the frequency with which Ss chose an alternative not recommended by either the E or the computer in the free and costly conditions.

Apparatus

The apparatus used in Experiment 1 was used in Experiment 2.

Advice and Computer Information

The advice and computer coded recommendations were the same as used in Experiment 1. Each recommended the wrong magnitude ("high" or "low") but the correct colour on a different 25% of the trials. Thus, either the advice or the computer recommendation was always correct. Each always recommended the correct colour but the two disagreed on the magnitude on one-half of the trials. Both were correct on the one-half of the trials they recommended the same choice.

Experimental Task and Procedure

Task procedure and instructions were the same as those of Experiment 1 through the completion of the 10 practice decision trials. The E then continued by reading the following instructions.

Free condition. "Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset. I believe that everybody approaches deciding which number to select a bit differently. Since the important thing here is that you have a fair degree of success, I will be glad to give you information which you may

use in making your selections. I'm working on this study with another student. Paul and I have some disagreements about what information will help a person most in solving this number series problem. I think that since each person is different the information he needs may be different. Paul thinks that everybody who participates in this task is enough alike that one set of information will do for everybody. Paul also has a great deal of faith in computers. The two of us got together and wrote a computer program which put out some information which Paul feels will be useful to anyone in this task. Since Paul and I disagree, you can ask for the computer output or you can ask for the information which I think will help you most on the basis of your past performance. We are mainly interested in how you use the information you get. Because of this, you will get information from me and from the computer each time you request either. The information I give you and the computer output may not always agree. On each trial that you would like some information, I want you to press the COMPUTER INFORMATION button or ask me for my information; whichever you are most interested in receiving. When you press the COMPUTER INFORMATION button, look at the screen above it. I will pass you my information through this slot (E points). Any questions? Okay, let's begin."

Costly condition. The instructions read by the E to Ss in this condition were the same as those in the free condition through the sentence "I will pass you my information through this slot (E points)." The E then continued with the justification used in costly conditions of Experiment 1.

The same procedure used in Experiment 1 was followed with regard to the post-experimental questionnaire (Appendix C). The payment and debriefing of Ss in Experiment 2 followed the procedure of Experiment 1.

Results of Experiment 2

Information seeking. Ss in the free condition did not seek advice significantly more often than Ss in the costly condition. However, Ss in the free condition sought significantly more computer information than Ss in the costly condition. The difference between the total information seeking in the free and costly conditions was significant. These data are summarized in Table 8.

Table 8

Mean Information Seeking Behavior of Ss in Experiment 2

Information Cost Conditions	Source of Information Sought		Total Mean Group Info. Seeking
	Experimenter (Advice)	Computer (Impersonal)	
Free	12.0	24.9[a]	36.9[b]
Costly	13.5	13.5[a]	27.0[b]

[a] $t = 1.93$, $df = 18$, $p < .05$, one-sided

[b] $t = 2.314$, $df = 18$, $p < .025$, one-sided

Recommendation following. Each S could have sought recommendations on 40 trials. On 20 of these trials the S would have received advice which

contradicted the computer information. The proportion of times each S followed advice rather than the computer recommendations was calculated. A t test of the means of these proportions of advice following comparing the free ($\bar{X}$ = .596) and costly ($\bar{X}$ = .583) conditions was not significant. However, a 2 X 2 (Sex X Cost) analysis of variance of these data yielded a significant F ratio for the sex factor ($F = 4.636$, $df = 1/16$, $p < .05$). The mean proportion for females was .689 and for males was .490. The number of Ss in the free and costly conditions who followed the advice rather than the computer recommendation on the first trial that the two recommendations disagreed were five and five, respectively. Ss in the free condition disregarded the information they received and chose an alternative recommended by neither the E nor the computer on significantly more trials ($\bar{X}$ = 3.0) than did Ss in the costly ($\bar{X}$ = 1.0) condition ($t = 2.1$, $df = 18$, $p < .05$, one-sided). However, Ss in the free condition had significantly more opportunities to disregard recommendations since they sought information more frequently. The mean proportion of trials upon which Ss in the two groups disregarded received recommendations were not significantly different.

Post-experimental questionnaire. There were no significant differences between the mean scale ratings of Ss in the free and costly conditions of Experiment 2.

Time. The time taken by Ss to complete the 40 trial decision session was recorded by the E using a stopwatch as the referent. The mean times taken by Ss in the free and costly conditions were 18.724 min. and 16.328 min., respectively. These mean times were not significantly different from one another.

Discarded subjects. One S's data was rejected because he was red-green color-blind. Data from five Ss in the free and three Ss in the costly conditions were rejected because their answers to the open-ended questions on the post-experimentl questionnaire indicated an awareness of the major hypothesis being tested. That is, they described the purpose of the experiment as a test of whether people were more likely to follow the recommendations of or trust the man (E) or the machine (computer). The information seeking and following behaviors of these rejected Ss did not differ significantly from data of included Ss. One S run in the free and three in the costly conditions were not included in these analyses because they never requested information.

Discussion

The predecisional information seeking results of Experiments 1 and 2 supported the predictions summarized in the first three hypotheses. In both experiments, free information was sought significantly more frequently than objectively equivalently diagnostic information costing money. Impersonal (computer) information was sought significantly more frequently than advice in Experiment 1. Charging money for information led to significantly less computer information but not advice being sought in Experiment 2. Additionally, all of the information seeking mean differences were in the predicted directions.

An indication that seeking free information was done at some psychological cost in these situations was that Ss in all conditions except the free condition of Experiment 2 sought information significantly less than 100% of the time. That Ss in Experiment 2 sought information more frequently than Ss in Experiment 1 conforms with attribution theory formulations. Ss were expected to attribute more usefulness to information from two sources than to information from either of those sources alone. The more frequent information seeking in Experiment 2 than Experiment 1 was not dependent upon diagnosticity. The objective diagnosticity of information received in the two experiments was equal.

Initial attributions of usefulness and cost seem to satisfactorily account for these predecisional information seeking data. This interpretation is bolstered by the lack of mean differences between the frequencies with which information was sought in the first versus the second half of the 40 decision session.

The post-experimental questionnaire data indicated that Ss in Experiment 1 perceived the difficulty of the task to parallel the psychological cost of information manipulation. These data may be interpreted as additional support for an attribution theory cost interpretation of the information seeking data.

The recommendation following data did not support the attribution theory predictions. The proportion of recommendations followed increased slightly from unsolicited to free solicited and from computer information to advice conditions in Experiment 1. These differences were in the predicted directions. Contrary to the hypotheses, the proportion of recommendations followed decreased slightly when money was charged for information in Experiment 1. Since all these between group differences were statistically insignificant they provide little evidence either for or against the experimental hypotheses.

From previous formulations, negative correlations between information seeking and following may be predicted. The considerable degree of variability in the information seeking frequency observed within conditions in Experiment 1 indicated the appropriateness of these correlations. This between S variability is reflected in sizeable confidence intervals displayed in Table 1. This frequency of information seeking was hypothesized to inversely reflect the attributed cost of information. Therefore, an S in a solicited condition who sought information less frequently than another S in that same condition could be held to have perceived the information as more costly. If this were the case, the worth subsequently attributed to received recommendations should have been greater in cases where Ss sought information less frequently. The attribution theory formulations presented previously could thus be extended to predict negative

correlations between the frequencies with which information was sought and the proportion of recommendations followed for Ss within the solicited conditions of Experiment 1. These correlations are negative and in two conditions (free solicited computer information and costly solicited advice) they are statistically significant. Additionally, the overall correlation between frequencies of information seeking and proportions of recommendation following in the four solicited conditions of Experiment 1 is negative and significant.

However, these correlational results must be interpreted with caution. Negative correlations were also found between the number of recommendations received and the proportion of recommendations followed in the two unsolicited conditions. The attribution cost-worth consistency formulations would not have led to predicting these latter correlations. Even though these correlations in the unsolicited conditions are not significantly different from zero, their magnitudes are as great as the overall correlation between information seeking and proportion of following in the solicited conditions. These negative correlations may reflect a tendency among Ss who received more recommendations and therefore more money to attempt to "out-guess" the unreliability of the recommendations.

The lack of significant differences in the proportion of recommendations followed in the six conditions of Experiment 1 may be due to a different attribution process predominating than the one previously discussed. It is possible that Ss in the costly solicited conditions did not seek as much information as Ss in the free solicited conditions because they attributed less usefulness as well as more cost to that information. Although there were no significant differences between conditions in Ss' ratings of the quality of the E's and the computer's information, other

post-experimental questionnaire data may be pertinent in this regard. Ss in the costly conditions rated the task as more difficult, themselves as performing more poorly, and the task itself as more chance than skill. Ss in costly conditions may have found the task more difficult, perceived themselves as performing poorly, and rated the task as chance rather than skill because they found the information they received to be irrelevant to solving the "number series problem." In other words, it is possible that charging money for the information shifted the focus of Ss toward problem solution.

This interpretation that attributions other than information cost varied is bolstered by the time results. The finding that Ss took more time in the free solicited than in the unsolicited conditions even though they received information on the same number of trials may have indicated Ss in the free solicited conditions spent a longer time thinking. Although Ss in the costly conditions did not spend more time in the task than Ss in the unsolicited conditions, much less of the Ss' time in costly conditions was taken by the mechanics of receiving information. It is reasonable to suppose, therefore, that more of their time was spent trying to solve the number series problem. The time result of Experiment 2 may be taken to support this interpretation. There, Ss requested and received information on one-third more trials in the free than in the costly condition. However, Ss in the free condition of Experiment 2 took only slightly more time to complete the task. It is tentatively suggested that Ss in the costly conditions of both Experiments 1 and 2 were more concerned with, and spent more time attempting, problem solution than Ss in the free and unsolicited conditions. As a consequence they were less satisfied with the information they received because it did not seem to lead to problem solution.

Support for this interpretation also comes from the results of pilot work in which Ss rated the quality of the E's and the computer's information as poor. The instructions to Ss in these pilot studies strongly emphasized the S's task as one of solving the "number series problem" Changing the instructional emphasis from problem solution to earning money was followed by a positive shift in Ss' ratings of information. However, Ss in the costly conditions still may have been less satisfied with the information because it did not lead to problem solution, thus decreasing their earnings.

It is not necessary, from a theoretical point of view, that this dissatisfaction with the information be reflected in the ratings of the information. After all, having spent money for information should act to constrain an individual from subsequently saying that the information was worthless. Spending money for information would not, however, as strongly inhibit one from rating the whole task as one of chance rather than skill. This is in fact what Ss in the costly conditions of Experiment 1 did.

The mean difference in proportion of advice recommendations followed on trials where the E and the computer recommended different alternatives in Experiment 2 are in the predicted direction although not statistically significant. Because the E's information was requested less frequently it was expected to be more impactful in the free condition. As the seeking data indicated, the addition of monetary cost decreased the computer information seeking more than advice seeking. It follows from the attribution theory formulations presented earlier that as the frequencies with which information is requested from the two sources approaches equality,

the proportions with which the opposing recommendations are followed should also approach equality. This choice of recommendation to follow result was only suggestive because the difference was not statistically significant nor large.

The finding that females followed the E's (advice) recommendations a significantly greater mean proportion of the time than males in Experiment 2 is not interpretable within the attribution theory formulations previously presented. None of the analyses of the post-experimental questionnaire data where sex was a factor were significant. Thus, these recommendation following results may be Type I error. On the other hand, female college students may be more likely than male college students to follow the recommendations of a male E in a face-to-face situation like the one used here where surveillance was obvious.

The recommendation following data from Experiment 1 indicated that the decision impact of recommendations from a source is much more closely related to the frequency with which those recommendations are received than to the cost of those recommendations. Neither the personal versus impersonal, nor the unsolicited versus free solicited versus costly solicited manipulations, had any significant effect upon the proportion of recommendations followed. On the other hand, no significant counter-hypotheses data were generated in these experiments. Several reasons may be advanced for the lack of significance of these recommendation following results without rejecting the attribution theory formulations proposed earlier.

Perhaps the most important characteristic of these data in terms of the lack of significances were the relatively large individual differences, reflected by large within group variances. These relatively large variances may reflect genuinely large differences among individuals in their

information utilization patterns within given situations. This would certainly not be inconsistent with attribution theory. In general, attribution theory emphasizes the importance of individual and possibly idiosyncratic perceptions and interpretations of situations. However, the present empirical approach is based upon the assumption that important commonalities will exist among the members of a culture which will allow satisfactory levels of prediction once the situational variations perceived as important in that culture are identified. Thus, a discussion of possible measures or indices of individual difference variables related to predecisional information utilization is clearly beyond the scope of the theoretical formulations of the situational approach employed here.

The lack of hypotheses supporting results from these experiments may be due to the experiments rather than to the hypotheses. Plausible explanations for the shortcomings of these results have been discussed. Methods of exploring these shortcomings using the present experimental paradigm can be envisioned. Perhaps the most obvious would be to develop a set of soluble tasks with information which would expedite problem solution. This should remove the possible attribution of task irrelevance to the information. Thus, a possible confound of the present experiments would be removed. A repeated measures design might have to be employed where Ss participated in all of the different source and cost conditions. This would be done to control for different ability levels among Ss, differential sensitivities to cost manipulations, and differing task difficulties. Tasks and orders would have to be counterbalanced with source and cost conditions.

It is possible that the particular level of information diagnosticity used in the present study, .75, was not optimal for the observation of recommendation following differences attributable to source and cost

manipulations. Levels of diagnosticity could be varied relatively easily in an artificial (insoluble) task as employed in this study. However, even the definition of diagnosticity could present a complex problem in a situation where information hints led to problem solution.

In addition to a soluble task, the advice might be spoken rather than written to the Ss. The latter procedure was used in the present study to avoid extraneous impact by the advice recommendations. This concern followed from findings presented by McGuire (1969) that spoken messages are generally more impactful than equivalent written messages. In addition to making the experimental situation more natural, speaking the advice recommendations would also avoid the time confound introduced by the time taken by the E to write the advice and pass it to the S.

Finally, it may be that the expenditure an individual engages to obtain predecisional information has very little relationship to the likelihood that he will follow recommendations contained in that information. Certainly the failure of Wrenn's (1962) attempted replication of Aronson and Mills (1959) and the complex findings of Schopler and Bateson (1962) in their expanded replication of Aronson and Mills (1959) plus the lack of significant information utilization differences attributable to psychological cost in the present study indicate that the relationship is at least complex if not imaginary.

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Appendix A

Instructions Read to Ss in

Experiments 1 and 2

General Introductory Instructions for Experiments 1 and 2

"Today I want you to help me gather data on how people utilize different kinds of information in making decisions. I will read all of the instructions to you."

"A colleague and I have chosen a number series task which is relatively difficult. Your job is to predict which number from 0 to 9 will appear on this screen (E points) each time you press the ANSWER button below the screen (E points). You will make these predictions by pushing ON a numbered switch on the board in front of you (E points). My colleague, Paul, and I have decided to pay you ten cents, two nickels, each time you choose the correct number."

"Now let me go through exactly what I want you to do."

"First, you decide which number from 0 to 9 you think will appear next."

"Second, push ON the switch on that numbered square."

"Third, press the ANSWER button and watch the screen above it to see which number appears. If the number you choose appears, two nickels will be dispensed from the coin dispenser into this tray for you (E points). If some other number appears, two nickels will be ejected behind the screen."

"The numbers will appear in a pre-arranged series. Your task is to earn as many nickels as you can by correctly predicting which number will appear. Of course, you will get to keep all of the money you earn by correctly predicting numbers."

"Do you have any questions about what you are to do? Now remember: Decide which number you think is going to appear. Push ON the switch of

the number you choose. Then press the ANSWER button to find out if you were correct or which number it was if you were wrong. This READY light (E points) will light at the beginning of each decision trial. Don't work any switches until this READY light comes on."

"After the READY light comes on, make sure that all of the switches are OFF (E points to choice board). Then push ON the switch of the number you choose for that trial. Okay. Let's go through a few trials."

Experiment 1 -- Free Solicited Advice

"Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset. Everybody seems to approach deciding which number to select a bit differently. Since the important thing here is that you have a fair degree of success, I will be glad to give you information which you may use in making your selection. The information which I give you will be that which I think will help you most in trying to get this number series problem. Of course, I can't guarantee that my information will always lead you to make the correct choice but I think it will be the best for you in terms of making predictions. I am interested in how you use the information I give you. If you want information on any trial, just ask me. I'll be glad to write down and give you what I think will be the information most useful to you. Any questions? Okay, let's begin."

Experiment 1 -- Unsolicited Advice

"Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset. Everybody seems to approach deciding which number to select a bit differently. Since the important thing here is that you have a fair degree of success, I will be glad to give you information which you may use in making yourselections. The information which I give you will be that which I think will help you most in trying to get this number series problem. Of course, I can't guarantee that my information will always lead you to make the correct choice but I think it will be the best for you in terms of making predictions. I am interested in how you use the information I give you. I will write down and give you information when I think it will be most useful to you. Before you make your prediction on a trial, you should wait and see if I am going to give you information on that trial. Any question? Okay, let's begin.

Experiment 1 -- Costly Solicited Advice

"Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset. Everybody seems to approach deciding which number to select a bit differently. Since the important thing here is that you have a fair degree of success, I will be glad to give you information which you may use in making your selections. The information which I give you will be that which I think will help you most in trying to get this number series problem. Of course, I can't guarantee that my information will always lead you to make the correct choice but I think it will be the best for you in terms of making predictions. I am interested in how you use the information I give you. If you want information on any trial, just ask me. I'll be glad to write down and give you what I think will be the information most useful to you. However, in order to be fair to everybody who participates in this task, you will have to pay for the help you receive. That is, it would be unfair if you got information on a large number of trials and earned more money than someone else who made good choices without so much help. As I said before, you can keep all the nickels you earn from this column by making correct choices. Because I think the information I give you will help you make more money, each piece of information you get will cost you a nickel. That is, each time you ask me for help, a nickel will be ejected from the column. If you then make the correct choice, you will receive only one instead of two nickels. If you still make the wrong choice after getting the information, the nickel you would have won on that trial will be lost as well. Any questions? Okay, let's begin."

Experiment 1 -- Free Solicited Computer Information

"Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset. Everybody seems to approach deciding which number to select a bit differently. Even though each person seems to have different hang-ups in solving this task, the student who I am working with on this project believes that there should be one best set of information which will be most useful to everyone trying to get this number series problem. Paul also has a great deal of faith in computers. The two of us got together and wrote a computer program which put out some information which Paul feels will be useful to anyone in this task. Since the important thing here is that you have a fair degree of success, you can get the computer information outputs. Of course, I can't guarantee that this information will always lead you to make the correct choice but according to the computer this information is the best in terms of anyone's making predictions. I am interested in how you use this information. If you want one of the computer's outputs on any trial, just hold this COMPUTER INFORMATION button down and watch the screen above it (E points). The information on the screen will be the computer programmed information. Any questions? Okay, let's begin."

Experiment 1 -- Unsolicited Computer Information

"Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset. Everybody seems to approach deciding which number to select a bit differently. Even though each person seems to have different hang-ups in solving this task, the student who I am working with on this project believes that there should be one best set of information which will be most useful to everyone trying to get this number series problem. Paul also has a great deal of faith in computers. The two of us got together and wrote a computer program which put out some information which Paul feels will be useful to anyone in this task. Since the important thing here is that you have a fair degree of success, you can get the computer information outputs. Of course, I can't guarantee that this information will always lead you to make the correct choice, but according to the computer this information is the best in terms of anyone's making predictions. I am interested in how you use this information. You will get the computer information outputs when, according to the program, it should be generally most useful to you. Before you make you prediction on a trial, look at the COMPUTER INFORMATION screen (E points). The computer output will be displayed on it on some trials. Any questions? Okay, let's begin."

Experiment 1 -- Costly Solicited Computer Information

"Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset. Everybody seems to approach deciding which number to select a bit differently. Even though each person seems to have different hang-ups in solving this task, the student who I am working with on this project believes that there should be one best set of information which will be most useful to everybody trying to get this number series problem. Paul also has a great deal of faith in computers. The two of us got together and wrote a computer program which put out some information which Paul feels will be useful to anyone in this task. Since the important thing here is that you have a fair degree of success, you can get the computer information outputs. Of course, I can't guarantee that this information will always lead you to make the correct choice but according to the computer this information is the best in terms of anyone's making predictions. I am intersted in how you use this information. If you want one of the computer's outputs on any trial, just hold this COMPUTER INFORMATION button down and watch the screen above it (E points). The information on the screen will be the computer programmed information. However, in order to be fair to everybody who participates in this task you will have to pay for the information you receive. That is, it would be unfair if you got information on a large number of trials and earned more money than someone else who made good choices without so much help. As I said before, you can keep the nickels you earn from this column by making correct choices. Because Paul thinks that the computer's information will help you make

more money, output will cost you a nickel. That is, each time you press the COMPUTER INFORMATION button, a nickel will be ejected from the column. If you then make the correct choice, you will receive only one instead of two nickels. If you still make the wrong choice after getting the output, the nickel you would have won on that trial will be lost as well. Any questions? Okay, let's begin."

Experiment 2 -- Free Condition

"Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset. I believe that everybody approaches deciding which number to select a bit differently. Since the important thing here is that you have a fair degree of success, I will be glad to give you information which you may use in making your selections. I'm working on this study with another student. Paul and I have some disagreements about what information will help a person most in solving this number series problem. I think that since each person is different the information he needs may be different. Paul thinks that everybody who participates in this task is enough alike that one set of information will do for everybody. Paul also has a great deal of faith in computers. The two of us got together and wrote a computer program which put out some information which Paul feels will be useful to anyone in this task. Since Paul and I disagree, you can ask for the computer output or you can ask for the information which I think will help you most on the basis of your past performance. We are mainly interested in how you use the information you get. Because of this, you will get information from me and from the computer each time you request either. The information I give you and the computer output may not always agree. On each trial that you would like some information, I want you to press the COMPUTER INFORMATION button or ask me for my information; which ever you are most intersted in receiving. When you press the COMPUTER INFORMATION button, look at the screen above it. I will pass you my information through this slot (E points). Any questions? Okay, let's begin."

Experiment 2 -- Costly Condition

"Now that you are familiar with this task we are ready to start the main session. I noticed that you are making certain kinds of errors. This is a difficult task so don't be too upset. I believe that everybody approaches deciding which number to select a bit differently. Since the important thing here is that you have a fair degree of success, I will be glad to give you information which you may use in making your selections. I'm working on this study with another student. Paul and I have some disagreements about what information will help a person most in solving this number series problem. I think that since each person is different the information he needs may be different. Paul thinks that everybody who participates in this task is enough alike that one set of information will do for everybody. Paul also has a great deal of faith in computers. The two of us got together and wrote a computer program which put out some information which Paul feels will be useful to anyone in this task. Since Paul and I disagree, you can ask for either kind of information you wish. That is, you can ask for the computer output or you can ask for the information which I think will help you most on the basis of your past performance. We are mainly interested in how you use the information you get. Because of this, you will get information from me and from the computer each time you request either. The information I give you and the computer output may not always agree. On each trial that you would like some information, I want you to press the COMPUTER INFORMATION button or ask me for my information; whichever you are most interested in receiving. When you press the COMPUTER INFORMATION button look at the screen above it. I will pass you my information through this

slot (E points). However, in order to be fair to everybody who participates in this task, you will have to pay for the help you receive. That is, it would be unfair if you got information on a large number of trials and earned more money than someone else who made good choices without so much help. As I said before, you can keep all the nickels you earn from this column by making correct choices. Because the information you receive should help you make more money, each time you get information it will cost you a nickel. That is, each time you ask for information from me, or press the COMPUTER INFORMATION button, a nickel will be ejected from the column. If you then make a correct choice you will receive only one instead of two nickels. If you still make a wrong choice after receiving the information, the nickel you would have won on that trial will be lost as well. Remember, press the COMPUTER INFORMATION button or ask me for my information. I need to know which you want when you want some. It will cost you a nickel each time. Any questions? Okay, let's begin."

Appendix B

Post-experimental Questionnaire

Administered in Experiments 1 and 2

Post-Experimental Questionnaire

(complete by all Ss)

INSTRUCTIONS

Please write brief answers to the following questions. Read and complete the questions one at a time in the order they appear below. Do NOT read ahead.

1. What were you to do in this experiment? (State the instructions in your own words.)

2. Did you find solving the problem difficult? (Check the scale.)

VERY EASY — AVERAGE — VERY DIFFICULT

3. Was the information given to you helpful in your attempts to solve the problem? If so, how?

4. In comparison to other participants, how well did you do on this task? (Check the scale below.)

VERY EASY — AVERAGE — VERY DIFFICULT

5. What sort of task did the designers of the experiment construct?

6. In your own words, what was the purpose of this experiment?

7. What was the intent of the experimenter?

8. What are the hypotheses being investigated in this experiment?

(These items were completed by Ss in the free and costly solicited advice conditions of Experiment 1.)

9. Why did you ask for information when you did?

10. Why didn't you ask for more information than you did?

11. How well do you think you would do if you repeated this experiment? (Check the scales below appropriately.)

WORSE — SAME — BETTER

12. How good was the experimenter's information?

POOR — FAIR — EXCELLENT

13. How competent is the experimenter?

POOR — FAIR — EXCELLENT

14. Was this task one of chance or one of skill?

CHANCE — 50-50 — SKILL

15. How do you feel about this experiment and having participated in it?

(These items were completed by Ss in the unsolicited advice condition of Experiment 1.)

9. How well do you think you would do if you repeated this experiment? (Check the scales below appropriately.)

WORSE — SAME — BETTER

10. How good was the experimenter's information?

POOR — FAIR — EXCELLENT

11. How competent is the experimenter?

POOR — FAIR — EXCELLENT

12. Was this task one of chance or one of skill?

CHANCE — 50-50 — SKILL

13. How do you feel about this experiment and having participated in it?

(These items were completed by Ss in the free and costly computer information conditions of Experiment 1.)

9. Why did you ask for information when you did?

10. Why didn't you ask for more information than you did?

11. How well do you think you would do if you repeated this experiment? (Check the scales below appropriately.)

WORSE — SAME — BETTER

12. How good was the computer's information?

POOR — FAIR — EXCELLENT

13. How competent is Paul?

POOR — FAIR — EXCELLENT

14. How competent is the experimenter?

POOR — FAIR — EXCELLENT

15. Was this task one of chance or one of skill?

CHANCE — 50-50 — SKILL

16. How do you feel about this experiment and having participated in it?

(These items were completed by Ss in the unsolicited computer information condition of Experiment 1.)

9. How well do you think you would do if you repeated this experiment? (Check the scales below appropriately.)

WORSE — SAME — BETTER

10. How good was the computer's information?

POOR — FAIR — EXCELLENT

11. How competent is Paul?

POOR — FAIR — EXCELLENT

12. How competent is the experimenter?

POOR — FAIR — EXCELLENT

13. Was this task one of chance or one of skill?

CHANCE — 50-50 — SKILL

14. How do you feel about this experiment and having participated in it?

(These items were completed by Ss in Experiment 2.)

9. Why did you ask for information when you did?

10. Why didn't you ask for more information than you did?

11. Which information was most useful to you?

12. How well do you think you would do if you repeated this experiment? (Check the scales below appropriately.)

WORSE — SAME — BETTER

13. How good was the experimenter's information?

POOR — FAIR — EXCELLENT

14. How good was the computer's information?

POOR — FAIR — EXCELLENT

15. How competent is Paul?

POOR — FAIR — EXCELLENT

16. How competent is the experimenter?

POOR — FAIR — EXCELLENT

17. Was this task one of chance or one of skill?

CHANCE — 50-50 — SKILL

18. How do you feel about this experiment and having participated in it?

Appendix C

Debriefing Explanation of

Study Read by All Ss

DESCRIPTION OF EXPERIMENT

You have just participated in an experiment designed to assess the relative effects of three variables. These variables are; 1) personal versus impersonal information, 2) asked-for versus unsolicited information, and 3) costly versus free information. We suspect that these variables may powerfully influence the amount of information which persons seek when they are faced with problems. We also suspect that these variables will influence the degree to which persons follow the recommendations contained in information they receive.

In this particular experiment we are attempting to determine whether personally delivered information will be more often sought after and followed than impersonal (computer) information. Therefore the experimenter gives information to some participants. Other participants receive information which is presumably devised by and delivered to them via a computer program. The number of times individuals in these different conditions ask for information will be compared. We shall also compare the number of times the recommendations contained in these two types of information is followed.

Persons may be generally more willing to follow recommendations for which they have asked than equivalent recommendations which they are given without asking. Some of the participants in this study received information (personal or impersonal) without having asked for it. How often these persons follow the recommendations will be compared with the frequency of recommendation following among persons who request all the information they receive.

We expect that free information will be sought more frequently

than costly information. On the other hand, one might be more likely to follow recommendations costing money than free recommendations. Thus, some participants are charged 5¢ each time they ask for information. Others receive the same information free of charge. We will compare the frequency of asking and following recommendations in these groups.

As you can see, the complexity of the design of this study made it necessary to carefully control the difficulty of the task and the kind of information that participants received in the various conditions. Therefore, a basically unsolvable task was chosen. Also, the objective quality of the information received by participants in all conditions was the same. In other words, you performance on this task does not reflect upon your ability in any way. Our purpose was to study the influence of situational factors on how often information was asked for and followed. Our interest in this study is centered about the conditions affecting asking for and following information containing action recommendations.

If you have any questions please ask me. I must ask you not to discuss this experiment with anyone. If you were to discuss this experiment with anyone who might then participate in it, the validity of our findings might be affected. Please do not discuss this experiment with anyone. If you would like a copy of the results of this study, please leave your name and address with me. A write-up of this study should be available to send to you in April or May of this year.

Thank you for your cooperation.

Appendix D

Raw Data

Legend of Raw Data Tables of Experiment 1

Heading	Meaning
Sex	Sex of S: F = female, M = male
A	Number of times S asked for and/or received information.
F	Number of times S followed recommendations received.
Time	Minutes taken by S to complete 40 trial decision session.
1	Millimeters from left S marked "Did you find solving the problem difficult?" scale.
2	Millimeters from left S marked "In comparison to other participants, how well did you do on this task?" scale.
3	Millimeters from left S marked "How well do you think you would do if you repeated this experiment?" scale.
4	Millimeters from left S marked "How good was the experimenter's information?" scale.
5	Millimeters from left S marked "How good was the computer's information?" scale.
6	Millimeters from left S marked "How competent is Paul?" scale.
7	Millimeters from left S marked "How competent is the experimenter?" scale.
8	Millimeters from left S marked "Was this task one of chance or one of skill?" scale.

Experiment 1 Raw Data

Advice Conditions Dependent Measurements

Sex	A	F	Time	1	2	3	4	7	8
				Free Solicited Advice					
F	40	39	24.9	61	60	60	117	120	115
F	9	9	12.75	101	40	72	120	120	78
F	8	6	10.8	89	57	95	91	83	58
F	14	14	13.75	120	59	120	60	120	60
F	32	22	19.92	109	62	90	87	119	46
M	40	39	15.75	112	70	63	90	104	27
M	29	23	45	115	65	89	68	88	90
M	40	29	16.08	82	57	97	76	102	90
M	35	20	24.5	105	13	85	68	82	111
M	11	9	14	83	85	113	87	118	115
$\bar{X}$	25.8	21	19.745	97.7	56.8	88.4	86.4	105.6	79.0
				Unsolicited Advice					
F	40	26	15.92	82	81	58	60	91	79
F	35	29	13	20	60	60	79	92	80
F	11	11	10	80	60	80	99	120	80
F	8	6	11.6	101	41	62	63	82	62
F	32	26	12.6	40	60	80	80	120	100
M	40	35	14	30	60	120	90	60	80
M	29	16	14.3	80	80	60	60	100	80
M	40	31	17.1	112	88	79	48	110	63
M	9	8	8.8	59	60	60	120	120	20
M	14	11	11.9	80	40	98	80	100	119
$\bar{X}$	25.8	19.9	12.922	68.4	63.0	75.7	77.9	99.5	76.3
				Costly Solicited Advice					
F	19	15	12.42	120	60	120	60	120	60
F	16	14	19.08	120	37	78	79	79	0
F	9	9	10.25	120	0	60	80	80	80
F	13	12	11.75	112	64	65	108	108	33
F	15	7	13	100	20	80	100	100	60
M	8	8	8.33	94	47	86	50	94	70
M	7	7	7.25	80	40	100	100	100	0
M	9	6	10.5	60	60	81	120	120	81
M	17	12	16.75	60	40	80	60	100	100
M	25	15	18.08	105	86	81	112	98	65
$\bar{X}$	13.6	10.5	12.741	97.1	45.4	83.1	86.9	99.9	54.9

Computer Information Condition Dependent Measurements

Sex	A	F	Time	1	2	3	5	6	7	8
				Free Solicited Computer Information						
F	39	23	13.5	80	40	77	77	65	88	40
F	40	35	9	20	60	60	80	80	80	95
F	40	29	11.75	120	60	70	100	100	99	60
F	31	25	10.83	0	60	100	100	100	100	80
F	38	33	8.75	12	61	118	95	60	100	58
M	40	30	14.5	105	60	73	91	93	94	85
M	40	25	9.33	87	25	70	91	89	86	87
M	21	20	9.92	59	58	79	88	100	102	68
M	40	16	8	63	20	74	60	60	120	120
M	11	11	8.25	120	60	80	100	100	100	80
$\bar{X}$	34	24.7	10.383	66.6	50.4	80.1	88.2	84.7	96.9	77.3
				Unsolicited Computer Information						
F	39	22	8.75	60	60	92	79	90	89	89
F	40	26	8.5	68	60	74	90	100	100	80
F	40	15	9.83	105	57	56	72	68	83	22
F	11	11	11.33	83	62	61	70	68	71	10
F	31	28	9.25	40	59	120	79	79	99	79
M	40	17	8.5	90	60	98	98	101	106	60
M	40	35	9.5	60	60	120	100	60	60	120
M	21	16	9.83	80	60	80	80	80	100	80
M	40	40	8	82	60	60	79	79	78	38
M	38	28	8	4	103	16	101	103	103	2
$\bar{X}$	34	23.8	9.149	67.2	64.1	77.7	84.8	82.8	88.9	58
				Costly Solicited Computer Information						
F	8	5	6.42	80	28	60	60	100	100	0
F	28	25	13.92	60	39	80	79	78	79	40
F	33	18	10.67	81	77	104	98	95	95	104
F	24	17	6.75	58	60	70	79	95	102	43
F	12	4	9	80	60	60	80	80	120	59
M	6	6	13.5	120	40	60	120	--	--	0
M	12	12	8.83	118	--	60	60	40	60	0
M	32	12	11	96	57	71	60	74	60	0
M	34	21	10.67	80	--	60	40	80	80	60
M	10	9	8.95	80	48	100	88	78	80	60
$\bar{X}$	19.9	12.9	9.971	85.3	51.1	72.5	76.4	80	86.2	36.6

Legend of Raw Data Tables of Experiment 2

Heading	
Sex	Sex of S: F = female, M = male
SA	Number of times S sought advice (E's information).
SCI	Number of times S sought computer's information.
FSA	Number of times S, followed E's recommendation when it disagreed with computer's.
FCI	Number of times S followed computer's recommendation when it disagreed with E's.
Time	Minutes taken by S to complete 40 trial decision session.
1	Millimeters from left S marked "Did you find solving the problem difficult?" scale.
2	Millimeters from left S marked "In comparison to other participants, how well did you do on this task?" scale.
3	Millimeters from left S marked "How well do you think you would do if you repeated this experiment?" scale.
4	Millimeters from left S marked "How good was the experimenter's information?" scale.
5	Millimeters from left S marked "How good was the computer's information?" scale.
6	Millimeters from left S marked "How competent is Paul?" scale.
7	Millimeters from left S marked "How competent is the experimenter?" scale.
8	Millimeters from left S marked "Was this task one of chance or one of skill?" scale.

Experiment 2 Raw Data

Dependent Measurements

Sex	SA	SCI	FSA	FCI	Time	1	2	3	4	5	6	7	8
						Free Condition							
F	1	39	17	3	14.42	60	60	60	80	60	60	60	20
F	24	16	14	6	16.83	20	60	61	100	60	41	99	80
F	31	9	10	10	21.67	91	--	80	48	47	--	--	60
F	13	27	10	10	21.33	40	60	60	60	80	80	60	40
F	1	39	13	7	19	40	60	100	100	60	60	100	100
M	0	28	3	8	17.33	119	--	91	93	87	22	20	6
M	3	37	11	9	18.83	120	0	60	60	60	60	60	0
M	6	34	13	4	17.33	70	70	80	61	79	60	80	41
M	16	20	10	8	18.58	80	100	60	100	60	20	120	40
M	25	0	8	5	21.92	60	80	120	60	60	80	80	120
$\bar{X}$	12	24.9	10.9	7	18.724	70	61.2	77.2	76.2	65.3	53.7	75.4	50.7
						Costly Condition							
F	26	0	12	1	14.67	99	--	78	98	40	--	100	70
F	0	2	1	0	9.83	80	61	120	0	60	60	60	60
F	40	0	15	4	23	45	66	89	90	20	60	92	60
F	6	21	5	7	16.33	30	60	60	80	80	80	82	60
F	0	28	9	7	15	97	37	74	57	78	76	57	58
M	36	0	6	12	19.92	100	60	60	60	60	60	60	20
M	6	19	3	10	17.83	88	65	110	47	91	--	--	110
M	0	11	1	4	10.08	6	62	80	60	100	59	100	40
M	0	37	12	6	16.12	97	28	60	40	40	40	40	60
M	21	17	12	5	20.5	41	62	62	98	5	15	95	60
$\bar{X}$	13.5	13.5	7.6	5.6	16.328	68.3	55.7	79.3	63	57.4	56.2	76.2	59.8

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